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South Carolina Department of Health and Environmental Control

Fact Sheet

S.C. Department of Health and Environmental Control • 2600 Bull Street • www.scdhec.gov/baq • Promoting and protecting the health of the public and the environment

Carbon Dioxide (CO_2)

Carbon dioxide (CO_2) is a greenhouse gas — a gas that traps heat in the atmosphere. It enters the air through the burning of fossil fuels (oil, natural gas, and coal), solid waste (garbage, construction and demolition debris, etc.), and trees and wood products. It's also a byproduct of other chemical reactions (such as manufacture of cement) and human activities. In addition, carbon dioxide and some other greenhouse gases occur in nature. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Since the Industrial Revolution in the 1700's, humans have increased CO_2 concentrations in the atmosphere by burning oil, coal and gas, clear cutting forests, and through other activities. In 2005, global atmospheric concentrations of CO_2 were 35 percent higher than they were before the Industrial Revolution.

The process of generating electricity is the single largest source of CO_2 emissions in the United States and in South Carolina. It represents 39 percent of all CO_2 emissions. Industry, businesses and residential customers rely heavily on electricity for lighting, heating, air conditioning, appliances and manufacturing.

Mobile sources, which include cars, trucks, planes, boats and trains, are the second largest source of CO_2 emissions in the U.S. In South Carolina, mobile sources account for 32 percent of the CO_2 emissions. Mobile sources pollute the air through combustion and fuel evaporation.

These emissions contribute greatly to air pollution nationwide and are the primary cause of air pollution in many urban areas. Power plants, industry and mobile sources present great challenges in our efforts to reduce greenhouse gases and other pollutants, such as oxides of nitrogen, sulfur dioxide and particulate matter.

Greenhouse gases such as CO_2 are causing more heat to be trapped in the Earth's atmosphere. The gasses may be contributing to an increase in global average temperature and to related climate changes.

You Can Make a Difference

What can you do to improve air quality and reduce greenhouse gases like CO_2?

- One of the best ways to help reduce air pollution is to drive less. Although new cars are producing fewer emissions, people are driving more. Try an alternative means of travel such as buses, trains, bicycles or walking when possible. Commute to work by carpooling, vanpooling, or by using public transportation.
- Although many of us depend on our vehicles for work and pleasure, we can still take some helpful actions to reduce emissions:
    1. Adopt driving practices that save gas and improve mileage, such as avoiding fast starts.
    2. Maintain vehicles on a regular basis to keep them running well.
    3. Use cleaner fuels where available. E85 and biodiesel are renewable fuels that can reduce greenhouse gas emissions.
    4. Buy the most fuel-efficient vehicle that will work for your needs.
- You can also reduce pollution through other activities such as:
    1. Recycling of office paper, newspapers, and beverage containers.
    2. Gardening and landscaping to reduce mowing areas.
    3. Energy conservation, such as turning off lights when you leave a room and turning off the computer when finished.
    4. Purchase of ENERGY STAR qualified products for your office and home.

For more information on how to make a difference, visit: http://www.epa.gov/climatechange/wycd/actionsteps.html

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